

## CLAIMS

What is claimed is:

1. A braze assembly, comprising:  
a metal member including an exterior flange of the metal member,  
the exterior flange including an inner surface;  
a braze material including titanium and nickel; and  
a ceramic member including a formed end, wherein the formed end  
of the ceramic member adjoins the inner surface of the exterior flange and is  
brazed to metal member with the braze material.
2. The braze assembly of Claim 1 wherein the braze assembly is  
used to hermetically seal the shell of a microstimulator.
3. The braze assembly of Claim 1 wherein the ceramic member is a  
substantially close-ended ceramic can and the metal member forms an end cap  
to the ceramic member, which end cap completely closes the end of the ceramic  
can.
4. The braze assembly of Claim 3 wherein the end cap is an  
electrode.
5. The braze assembly of Claim 4 wherein the electrode further  
comprises:  
a narrow-diameter pin;  
a broad-diameter braze surface adjoining the substantially  
closed-end of the ceramic member; and

a stimulating surface with grooves that increase the surface area of the stimulating surface.

6. The braze assembly of Claim 1 wherein the exterior flange forms a step at the end of the metal member against which the formed end of the ceramic member may be received, and wherein the surface area between the metal member and the ceramic member is capable of receiving an adequate amount of braze material to form a strong braze bond.

7. The braze assembly of Claim 6 wherein the exterior flange provides lateral support to the braze assembly.

8. A braze assembly for a microstimulator, comprising:  
a metal member including an exterior flange of the metal member,  
the exterior flange including an inner surface;  
a braze material including titanium and nickel; and  
a ceramic member including a formed end, wherein the formed end of the ceramic member adjoins the inner surface of the exterior flange and is brazed to metal member with the braze material;  
wherein the metal member, the braze material, and the ceramic member form a braze assembly that is used to hermetically seal a microstimulator shell.

9. The braze assembly of Claim 8 wherein the ceramic member is a substantially close-ended ceramic can and the metal member forms an end cap to the ceramic member, which end cap completely closes the end of the ceramic can.

10. The braze assembly of Claim 9 wherein the end cap is an electrode.
11. The braze assembly of Claim 10 wherein the electrode further comprises:
  - a narrow-diameter pin;
  - a broad-diameter braze surface adjoining the substantially closed-end of the ceramic member; and
  - a stimulating surface with grooves that increase the surface area of the stimulating surface.
12. The braze assembly of Claim 8 wherein the exterior flange forms a step at the end of the metal member against which the formed end of the ceramic member may be received, and wherein the surface area between the metal member and the ceramic member is capable of receiving an adequate amount of braze material to form a strong braze bond.
13. The braze assembly of Claim 12 wherein the exterior flange provides lateral support to the braze assembly.
14. A method of brazing an assembly, comprising:
  - providing a ceramic member with an end, which end is formed without machining and which ceramic member includes zirconia;
  - placing braze material between a metal member and the ceramic member, the braze material including titanium and nickel, the metal member including titanium and an exterior flange, which exterior flange includes an inner surface;
  - compressing the metal member and the end of the ceramic member formed without machining together;

heating the braze material, the metal member, and the ceramic member in a vacuum until the braze material forms a liquidus; and

cooling the braze material, the metal member, and the ceramic member in the vacuum until the braze material forms a solidus.

15. The method of Claim 14 wherein the ceramic member includes a substantially closed end.

16. The method of Claim 15, wherein the step of placing the braze material between the metal member and the ceramic member further comprises the step of aligning the metal member with the braze material and the substantially closed end of the ceramic member.

17. The method of Claim 14 wherein the end cap is an electrode.

18. The method of Claim 17 wherein the electrode further comprises:  
a narrow-diameter pin;  
a broad-diameter braze surface adjoining the substantially closed-end of the ceramic member; and  
a stimulating surface with grooves that increase the surface area of the stimulating surface.

19. The method of Claim 14 further comprising the following steps:  
receiving the ceramic member into the exterior flange of the metal member before the steps of compressing, heating, and cooling; and  
the step of placing further including placing an amount of braze material between the metal member and the ceramic member, which amount of braze material is capable of forming a strong braze bond without exuding from between the metal member and the ceramic member.

20. The method of Claim 19 wherein the exterior flange provides lateral support to ceramic member during the steps of compressing, heating, and cooling.